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(71) Applicant (for all designated States except US): ELI LILLY AND COMPANY [US/US]; Lilly Corporate Center, Indianapolis, Indiana 46285 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): BRANDT, John, Thomas [US/US]; 7330 Royal Oakland Drive, Indianapolis, Indiana 46236 (US). FARID, Nagy, Alphonse [US/US]; 810 Millerwood Drive, Lebanon, Indiana 46052 (US). JAKUBOWSKI, Joseph, Anthony [US/US]; 3740 Governors Road, Indianapolis, Indiana 46208 (US). WINTERS, Kenneth, John [US/US]; 3342 Kenney Drive East, Germantown, Tennessee 38139 (US).

(74) Agents: GINAH, Francis, O. et al.; Patent Division, Eli Lilly and Company, P.O. Box 6288, Indianapolis, Indiana 46206-6288 (US).

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Declarations under Rule 4.17:

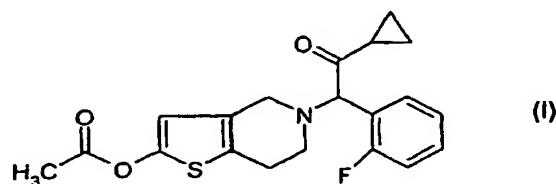
— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,

[Continued on next page]

WO 2004/098713 A3

(54) Title: TREATING CARDIOVASCULAR DISEASES WITH A COMPOUND OF FORMULA (I) (CS 747 - PRASUGREL; RN 150322-43-4)



(57) Abstract: A method of treating Cardiovascular Diseases comprising administering of a compound of formula (I) (chemical names i.a. CS747 or Prasugrel; registry number 150322-43-3) or a pharmaceutically acceptable salt, solvate, prodrug, active metabolite, racemate or enantiomer thereof, in conjunction with coronary and non-coronary intervention procedures is disclosed.



IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
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PCT/US2004/011257

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 IPC 7 A61P9/00 A61K31/4365 A61K31/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data, CHEM ABS Data, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/44239 A (BRISTOL MYERS SQUIBB CO ; MURUGESAN NATESAN (US); GU ZHENGXIANG (US);) 21 June 2001 (2001-06-21) page 1, lines 7-9 page 48, lines 9,24,25 sentence bridging page 48 and page 49 page 53, lines 25,26 page 54, lines 4,5	1-14
X	WO 02/04461 A (YAMAMURA NAOTOSHI ; SANKYO CO (JP); ASAII FUMITOSHI (JP); INOUE TERUHIK) 17 January 2002 (2002-01-17) abstract page 3	1-14

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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X document of particular relevance; the claimed Invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

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European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Baumgärtner, H

INTERNATIONAL SEARCH REPORT

International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/051412 A (SANKYO CO ; ASAII FUMITOSHI (JP); INOUE TERUHIKO (JP); OGAWA TAKETOSHI) 4 July 2002 (2002-07-04) abstract page 3	1-14
X	WO 97/49397 A (SANKYO CO ; ASAII FUMITOSHI (JP); INOUE TERUHIKO (JP); OGAWA TAKETOSHI) 31 December 1997 (1997-12-31) abstract	1-14
X	EP 1 298 132 A (SANKYO CO ; UBE INDUSTRIES (JP)) 2 April 2003 (2003-04-02) page 2 '0001!, '0007!, '0008!	1-14

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/011257

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
WO 0144239	A 21-06-2001	AU 2092601 A		25-06-2001
		CA 2395088 A1		21-06-2001
		EP 1237888 A2		11-09-2002
		JP 2003520785 T		08-07-2003
		WO 0144239 A2		21-06-2001
		US 2004127515 A1		01-07-2004
		US 2004106833 A1		03-06-2004
		US 2002143024 A1		03-10-2002
WO 0204461	A 17-01-2002	AU 6791601 A		21-01-2002
		BR 0112168 A		02-09-2003
		CA 2415558 A1		17-01-2002
		CN 1452624 T		29-10-2003
		CZ 20030018 A3		14-05-2003
		EP 1298132 A1		02-04-2003
		HU 0301645 A2		29-09-2003
		WO 0204461 A1		17-01-2002
		JP 2002145883 A		22-05-2002
		NO 20030022 A		05-03-2003
		US 2003134872 A1		17-07-2003
WO 02051412	A 04-07-2002	BR 0116531 A		25-02-2004
		CA 2432644 A1		04-07-2002
		CZ 20031660 A3		17-12-2003
		EP 1350511 A1		08-10-2003
		HU 0400644 A2		28-06-2004
		WO 02051412 A1		04-07-2002
		JP 2002255814 A		11-09-2002
		NO 20032902 A		24-06-2003
		SK 7542003 A3		02-12-2003
		US 2004024013 A1		05-02-2004
WO 9749397	A 31-12-1997	AU 3191597 A		14-01-1998
		WO 9749397 A1		31-12-1997
		JP 10310586 A		24-11-1998
EP 1298132	A 02-04-2003	AU 6791601 A		21-01-2002
		BR 0112168 A		02-09-2003
		CA 2415558 A1		17-01-2002
		EP 1298132 A1		02-04-2003
		HU 0301645 A2		29-09-2003
		NO 20030022 A		05-03-2003
		US 2003134872 A1		17-07-2003
		CN 1452624 T		29-10-2003
		CZ 20030018 A3		14-05-2003
		WO 0204461 A1		17-01-2002
		JP 2002145883 A		22-05-2002

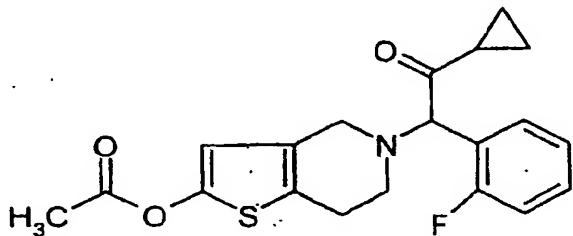
INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2004/011257

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

A method of treating Cardiovascular Diseases comprising administering of a compound of formula 1 (chemical names i.a. CS747 or Prasugrel; registry number 150322-43-3)



I

or a pharmaceutically acceptable salt, solvate, prodrug, active metabolite, racemate or enantiomer thereof, in conjunction with coronary and non-coronary intervention procedures is disclosed.